TOPIC: HOW TO PUMP FROM DRAFT - MODEL 34 OR 35

TIME FRAME: :30

LEVEL OF INSTRUCTION: Level II

BEHAVIORAL OBJECTIVE:

Condition: A CAL FIRE Model 34 or 35 engine, with empty water tank, a complement of hard suction hose, and the following items and conditions: tank to pump valve open, tank fill valve closed, suction inlet valve closed.

Behavior: The student, and an assistant, will travel to a static water source, spot the engine, prime the pump, obtain a draft, engage the main pump, charge a 1-½" or 1-¾" line, and deliver an uninterrupted stream of water at 150 PSI (± 20). After completing the evolution, the apparatus will be returned to its original condition.

Standard: Complete all operations according to the job breakdown

MATERIALS NEEDED:

- One (1) CAL FIRE Model 34 or 35 engine with empty water tank
- One (1) assistant
- One (1) 100' length of 1-½" or 1-¾" hose with nozzle and bale shut-off
- One (1) 15' length rope
- One (1) shovel
- One (1) suction hose strainer
- Three (3) sections of hard suction hose
- Appropriate PPE per CAL FIRE policy
- One (1) Rubber mallet
- Two (2) spanner wrenches

REFERENCES:

- Vehicle Operation and Maintenance Guide
- IFSTA Essentials, 5th Edition, Chapter 12

PREPARATION: In rural settings, it is often impossible to locate a hydrant as a water source for fire suppression activities. Alternative water sources such as rivers, lakes, ponds, or swimming pools may have to be utilized in these cases. The quickest method of

obtaining water from these sources may be drafting. The ability to draft from external water sources is a basic engine operation skill.

PRESENTATION

OPERATIONS	KEY POINTS
1. Safely travel to the drafting location	1a. Headlights on b. Seatbelts on
2. Spot and park the engine	2a. Close enough to ensure hard suction hoses will reach water source b. Ensure engine is on stable ground c. Foot on service brake d. Place transmission in neutral e. Set spring brake
3. Exit engine and set chock blocks	3a. In accordance with CAL FIRE policy • Gloves may be removed after chock blocks are set in order to operate the engine or pump, but must be worn when working with equipment such as hoses, and appliances

PRESENTATION

OPERATIONS	KEY POINTS
4. Set up hard suction hose for drafting	4a. Connect the lengths of hard suction hose necessary to reach the static water source. Be sure to check all couplings for gaskets
	b. Dip couplings in water source to lubricate gaskets for airtight seal
	c. Connect strainer to the end of the hard suction hose
	d. Use spanner wrenches or rubber mallet to tighten all connections
	e. Connect rope to the end of the hard suction strainer
	f. Connect hard suction hose to engine
	g. Place suction strainer on shovel face or in rigid bucket, tie off
	h. Place hard suction hose in the water source
5. Instruct assistant to deploy a pre-connected 1-½" or 1-¾" hoseline	5a. Hoseline must be at least 100'
	b. Assistant shall deploy the hose after being instructed to do so by the student
	c. Hose may be staffed by assistant or connected to pre-plumbed drafting tank to recycle water (training)
6. Place valves in appropriate position	6a. Transfer valve to "PRESSURE"
	b. Close tank to pump valve completely

PRESENTATION

OPERATIONS	KEY POINTS
7. Establish a prime	7a. Engage primer selector b. For no longer than 30 seconds c. Look for water entering suction hose (1) Observe water through clear hose or (2) Watch for bowing of hose due to weight of the water filling the hose d. Listen for change in primer sound e. Feel the weight of the water filling the hard suction hose f. Observe suction gauge verifying a negative vacuum g. Watch for water being dumped from primer pump discharge
8. Engage the pump	8a. Reenter the cab and engage midship pump switch to “ON” • Place foot on service brake • Engine transmission remains in neutral
9. Exit cab, set pressure at engineer’s exterior pump panel	9a. Cycle transfer valve switch on pump panel to the “PRESSURE” position b. Press “PRESET” on Pump Boss (preset to 100 psi engine pressure)

PRESENTATION

OPERATIONS	KEY POINTS
10. Confirm assistant is ready for water and loudly state "Water Coming!"	10a. Do not charge hoseline without assistant confirmation that they are ready for water
11. Charge hoseline	11a. Open discharge valve slowly and completely b. Allow assistant to check for adequate nozzle pattern and water flow • Do not increase pump pressure until assistant has checked nozzle pattern and flow
12. Increase pump pressure to 150 psi (± 20 psi)	12a. Turn pump control knob to indicate 150 psi (±20 psi) on the Pump Boss and pump discharge gauge b. When an effective fire stream from the nozzle has been achieved
13. Shut down charged hose line	13a. Notifying assistant that the line is going to be shut down by stating loudly "Shutting Down" b. Closing discharge valve, slowly and completely c. Drafting evolution successful
14. Fill engine water tank if instructed to do so	14a. Open tank fill valve b. Open tank suction valve completely
15. Disengage main pump	

PRESENTATION

OPERATIONS	KEY POINTS
16. Return engine to response ready condition	16a. Return suction hoses and appliances to appropriate compartments 16b. Returning suction hoses and appliances to appropriate engine compartments 16c. Use assistant to help 16d. Leave suction strainer attached to one hard suction sleeve 16e. Rebedd the preconnected discharge hose 16f. Notify the proctor when finished

APPLICATION:

The student will practice performing the operations in the job breakdown while under supervision.

EVALUATION:

The student will complete a manipulative performance test at a time determined allotted by the instructor.

ASSIGNMENT:

Practice this job in order to prepare yourself for the upcoming performance test.